

Application No. 09/350,466
Filed: July 9, 1999
Group Art Unit: 1743

AMENDMENT TO THE CLAIMS

1-20. Cancelled

21. (Currently amended) A broad screen analytical detection element, capable of detection of several classes of gas or liquid analytes, said detection element comprising

a first region comprising a solid and adsorbed on said solid a radiant energy-detectable material or a material capable of producing a radiant energy-detectable material, wherein said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material is desorbable by a target analyte; and

a second region for sequestering radiant energy-detectable material

(a) desorbed from or

(b) produced by material desorbed from

said solid prior to detection of said radiant energy-detectable material,

wherein either said first region or said second region further comprises a high boiling plasticizer/solvent and

wherein classes of gas or liquid analytes are detected.

22. (Previously added) The analytical detection element of claim 21 wherein said solid is selected from the group consisting of activated carbon, silica, alumina, ion exchange resin, molecular sieve and particulate organic polymeric adsorbent.

23. (Previously added) The analytical detection element of claim 21 wherein said detection element is multi-layered and said first region and said second region are in separate layers in said detection element.

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24. Cancelled

25. (Previously amended) The analytical detection element of claim 44 wherein said first region is applied to a surface as a coating material.

26. (Previously added) The analytical detection element of claim 21 wherein said detection element is in multiple small pieces.

27. (Currently amended) A broad screen analytical detection element, capable of detection of several classes of gas or liquid analytes, said detection element comprising

a first region comprising a solid and adsorbed on said solid a radiant energy-detectable material or a material capable of producing a radiant energy-detectable material, wherein said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material is desorbable by a target analyte; and

a second region for sequestering radiant energy-detectable material desorbed from or produced by material desorbed from said solid prior to detection of said radiant energy-detectable material,

wherein said detection element is in the form of multiple small pieces and

wherein classes of gas or liquid analytes are detected.

28. (Previously added) The analytical detection element of claim 21 further comprising a background region against which radiant energy-detectable material can be detected.

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29. (Previously added) The analytical detection element of claim 21 wherein a material capable of producing a radiant energy-detectable material is adsorbed on said solid and said material capable of producing a radiant energy-detectable material is capable of initiating a chemical reaction or physical process that results in a change in a radiant energy-detectable material residing in said second region.

30. Cancelled

31. (Previously amended) The analytical detection element of claim 32, wherein said detection element contains one or more additional layers.

32. (Previously amended) The analytical detection element of claim 43, wherein said second region is between said first region and said transparent base layer in said detection element.

33. (Currently amended) A broad screen analyte detection badge comprising the broad screen analytical detection element of claim 43, wherein classes of gas or liquid analytes are detected.

34. (Currently amended) A broad screen analyte detection badge comprising the analytical detection element of claim 21, wherein classes of gas or liquid analytes are detected.

35-36. Cancelled

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37. (Currently amended) A coating material comprising the broad screen analytical detection element of claim 21, wherein classes of gas or liquid analytes are detected.

38. (Currently amended) A broad screen method for detection of one or more analytes or classes of analytes, said method comprising the steps of:

providing an analytical detection element, said detection element comprising a solid and adsorbed on said solid a radiant energy-detectable material or a material capable of producing a radiant energy-detectable material, wherein said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material is desorbable by a target analyte;

exposing said analytical detection element to a population of molecules possibly containing said target analytes for a period of time sufficient to permit desorption by said target analytes of said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material from said solid, wherein said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material desorbed by said target analyte is made mobile by the presence of a high boiling plasticizer/solvent;

determining the amount of said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material desorbed from said solid; and

correlating the amount of said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material desorbed from said solid with the amount of target analyte present in said population of molecules.

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correlating the amount of said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material desorbed from said molecularly permeable solid with the amount of target analyte present in said population of molecules,

wherein one or more analytes or classes of analytes are detected.

39. (Previously added) The method of claim 38 wherein, in said providing step, said solid in said analytical detection element is selected from the group consisting of activated carbon, silica, alumina, ion exchange resin and molecular sieve.

40. (Previously added) The method of claim 38 wherein, in said providing step, said analytical detection element is multi-layered and said first region and said second region are in separate layers in said detection element.

41. (Previously added) The method of claim 38 wherein, in said providing step, said analytical detection element further comprises a background region against which radiant energy-detectable material can be detected.

42. (Previously added) The method of claim 38 wherein, in said analytical detection element in said providing step, a material capable of producing a radiant energy-detectable material is adsorbed on said solid and said material capable of producing a radiant energy-detectable material is capable of initiating a chemical reaction or physical process that results in a change in

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a radiant energy-detectable material residing in said second region.

43. (Previously added) The broad screen analytical detection element of claim 21, wherein said first region constitutes a sample capture layer, said second region contains (a) a concentrating or mordanting layer, (b) an opacifying or reflecting layer or (c) both said layers; and wherein said analytical detection element also comprises a transparent base layer.

44. (Currently amended) A broad screen analytical detection element, capable of detection of several classes of gas or liquid analytes, said detection element comprising a first region comprising

(a) a solid and adsorbed on said solid a radiant energy-detectable material or a material capable of producing a radiant energy-detectable material, wherein said radiant energy-detectable material or said material capable of producing a radiant energy-detectable material is desorbable by a target analyte, and

(b) a high boiling plasticizer/solvent,

wherein several classes of gas or liquid analytes are detected.

45. (Previously added) The method of claim 38 wherein said high boiling plasticizer/solvent is selected from the group consisting of alcohols, diols and higher polyols, sulfoxides, amides, esters, carbonates and ketones.

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46. (Previously added) The method of claim 45 wherein said high boiling plasticizer/solvent is selected from the group consisting of propylene carbonate; 1,4-butanediol; 1,2-propanediol; and 2-methyl-1,3-propanediol.